

CLAIMS

[1] A surface-treated steel sheet for a battery case, characterized by having a nickel-phosphorus alloy plating layer formed on its surface which will define the inner surface of the battery case.

[2] A surface-treated steel sheet for a battery case, characterized by having a nickel plating layer formed as an under layer and a nickel-phosphorus alloy plating layer formed as a top layer on its surface which will define the inner surface of the battery case.

[3] A surface-treated steel sheet for a battery case, characterized by having an iron-nickel diffusion layer formed as an under layer and a nickel-phosphorus alloy plating layer formed as a top layer on its surface which will define the inner surface of the battery case.

[4] A surface-treated steel sheet for a battery case, characterized by having an iron-nickel diffusion layer formed as an under layer, a nickel layer formed as an intermediate layer and a nickel-phosphorus alloy plating layer formed as a top layer on its surface which will define the inner surface of the battery case.

[5] A surface-treated steel sheet for a battery case as set forth in any of claims 1 to 4, wherein the nickel-phosphorus alloy plating layer has a thickness in the range of 0.1 to 2 μm .

[6] A surface-treated steel sheet for a battery case as set forth in any of claims 1 to 5, wherein the nickel-phosphorus alloy plating layer has a phosphorus content in the range of 1 to 12% by weight.

[7] A surface-treated steel sheet for a battery case as set forth in any of claims 1 to 6, wherein the nickel-phosphorus alloy plating layer contains 5 to 70% by weight of cobalt.

[8] A battery case characterized by having a nickel-phosphorus alloy plating layer formed on its inner surface.

[9] A battery case characterized by having a nickel plating layer formed as an under layer and a nickel-phosphorus alloy plating layer formed as a top layer on its inner surface.

[10] A battery case characterized by having an iron-nickel diffusion layer formed as an under layer and a nickel-phosphorus alloy plating layer formed as a top layer on its inner surface.

[11] A battery case characterized by having an iron-nickel diffusion layer formed as an under layer, a nickel layer as an intermediate layer and a nickel-phosphorus alloy plating layer formed as a top layer on its inner surface.

[12] A battery case as set forth in any of claims 8 to 11, wherein the nickel-phosphorus alloy plating layer has a phosphorus content in the range of 1 to 12% by weight.

[13] A battery case as set forth in any of claims 8 to 12,

wherein the nickel-phosphorus alloy plating layer contains 5 to 70% by weight of cobalt.

[14] A battery case as set forth in any of claims 8 to 13, and formed by a deep drawing, DI or DTR method.

[15] A battery characterized by employing a battery case as set forth in any of claims 8 to 14 and packing its interior with cathode and anode active materials.